

AMENDMENTS TO THE CLAIMS

1-27. (Cancelled)

28. (New) A substrate processing system comprising:

a plurality of processing units each adapted to process a substrate;

a transfer apparatus adapted to convey the substrate between the processing units and including a substrate carrying arm adapted to hold the substrate when the transfer apparatus conveys the substrate; and

image pickup means adapted to pick up an image of a member of the processing units or the substrate being placed in the processing units, the image pickup means being mounted to the transfer apparatus such that the image pickup means moves together with the substrate carrying arm at least when the substrate carrying arm is moving in a specific direction;

wherein:

the plurality of processing units include a resist coating unit having a spin chuck adapted to rotate while holding the substrate, and a nozzle adapted to supply a resist solution onto a center of a surface of the substrate held by the spin chuck;

the image pickup means comprises a laser displacement measurement apparatus having a plurality of sensing elements, which are arrayed, each of the sensing elements being adapted to generate a sensing signal which varies depending on a distance between each of the sensing elements and the surface of the substrate; and

said substrate processing system further includes a controller configured to recognize, based on the sensing signals generated by the sensing elements, a shape of a peripheral edge of the resist solution spreading outward due to centrifugal force when the substrate supplied with the resist solution is rotated by the spin chuck.

29. (New) The substrate processing system according to claim 28, wherein the controller is configured to judge whether or not resist solution coating conditions are appropriate based on the shape of the peripheral edge of the resist solution, and configured to control the resist coating unit to change a supplying rate of the resist solution supplied from the nozzle or a rotating speed of the spin chuck, if it is judged that the resist solution coating conditions are not appropriate.

30. (New) A substrate processing system comprising:

a plurality of processing units each adapted to process a substrate;

a transfer apparatus adapted to convey the substrate between the processing units and including a substrate carrying arm adapted to hold the substrate when the transfer apparatus conveys the substrate; and

image pickup means adapted to pick up an image of a member of the processing units or the substrate being placed in the processing units, the image pickup means being mounted to the transfer apparatus such that the image pickup means moves together with the substrate carrying arm at least when the substrate carrying arm is moving in a specific direction;

wherein:

the plurality of processing units include a developing unit adapted to develop an exposed resist film formed on the substrate by supplying a developing solution onto the substrate;

said substrate processing system further includes a controller having a memory in which a color tone or a color shading of an optimally-developed substrate is stored; and

the controller is configured to monitor a color tone or a color shading of the resist being developed by the developing unit by using the image pickup means, and configured to control the developing unit to stop a developing operation of the developing unit when the color tone or the color shading of the resist being developed by the developing unit matches the color tone or the color shading of the optimally-developed substrate stored in the memory.

31. (New) A substrate processing system comprising:

a plurality of processing units each adapted to process a substrate;

a transfer apparatus adapted to convey the substrate between the processing units and including a substrate carrying arm adapted to hold the substrate when the transfer apparatus conveys the substrate; and

image pickup means adapted to pick up an image of a member of the processing units or the substrate being placed in the processing units, the image pickup means being mounted to the transfer apparatus such that the image pickup means moves together with the substrate carrying arm at least when the substrate carrying arm is moving in a specific direction;

wherein:

the plurality of processing units include a resist coating unit having a spin chuck adapted to rotate while holding the substrate, and a nozzle adapted to supply a resist solution onto a center of a surface of the substrate held by the spin chuck;

the spin chuck has a rotation shaft, and a line extending parallel to a rotational axis of the spin chuck is drawn on a circumferential surface of the rotation shaft; and

said substrate processing system further includes a controller configured to control the spin chuck to turn the rotation shaft to an angular position where the line opposes the image pickup means, configured to judge whether or not the nozzle is located in an appropriate position with respect to a first direction where the nozzle can supply the resist solution onto the center of the substrate as viewed in a second direction perpendicular to the first direction based on an image of the nozzle and the line picked up by the image pickup means, and configured to control the resist coating unit to move the nozzle to locate the appropriate position if it is judged that the nozzle is not located in the appropriate position.

32. (New) The substrate processing apparatus according to claim 31, wherein:

the controller has a function of determining whether or not the image pickup means is in focus on a target; and

the controller is configured to judge whether or not the nozzle is located in an appropriate position with respect to the second direction where the nozzle can supply the resist solution onto the center of the substrate as viewed in the first direction based on a focusing condition of an image of the resist solution being supplied to the substrate picked up by the image pickup means, and configured to control the resist coating unit to move the nozzle to locate the appropriate position with respect to the second direction if it is judged that the nozzle is not located in the appropriate position with respect to the second direction.

33. (New) A substrate processing system comprising:

a plurality of processing units each adapted to process a substrate;

a transfer apparatus adapted to convey the substrate between the processing units and including a substrate carrying arm adapted to hold the substrate when the transfer apparatus conveys the substrate; and

image pickup means adapted to pick up an image of a member of the processing units or the substrate being placed in the processing units, the image pickup means being mounted to the

transfer apparatus such that the image pickup means moves together with the substrate carrying arm at least when the substrate carrying arm is moving in a specific direction;

wherein:

the plurality of processing units include a baking unit or a cooling unit, which includes a processing plate adapted to heat or cool the substrate, a substrate lifter adapted to receive the substrate from the transfer apparatus and descend to place the substrate on the processing place, and a guide member adapted to guide the substrate to place the substrate at an appropriate position on the processing plate when the substrate is being lowered by the substrate lifter;

said substrate processing system further includes a controller configured to judge whether or not the substrate rests on the guide member based on an image of the substrate placed on the processing plate picked up by the image pickup means, and configured to control the substrate lifter to rise and descend in order to raise and lower the substrate if it is judged that the substrate rests on the guide member and thus is not placed at the appropriate position on the processing plate.

34. (New) A substrate processing system comprising:

a plurality of processing units each adapted to process a substrate;

a transfer apparatus adapted to convey the substrate between the processing units and including a substrate carrying arm adapted to hold the substrate when the transfer apparatus conveys the substrate; and

image pickup means adapted to pick up an image of a member of the processing units or the substrate being placed in the processing units, the image pickup means being mounted to the transfer apparatus such that the image pickup means moves together with the substrate carrying arm at least when the substrate carrying arm is moving in a specific direction;

wherein:

the plurality of processing units include a resist coating unit having a spin chuck adapted to rotate while holding the substrate, and a nozzle adapted to supply a resist solution onto a center of a surface of the substrate held by the spin chuck;

said substrate processing system further includes a controller configured to judge whether or not a drip of the resist solution appears at a tip of the nozzle based on an image of the nozzle picked up by the image pickup means, after the substrate is held by the spin chuck and before the nozzle starts to supply the resist solution onto the substrate, and configured to control

the resist coating apparatus to halt an operation of the resist coating apparatus if it is judged that the drip appears.